

WHAT IS CLAIMED IS

1. An integrated circuit with an oscillator, comprising:
a switching control for controlling a switching circuit, the switching control having a reference input and an output derived from a relationship of the reference input and a value of a timing element supplied to the switching control;
5 the switching circuit operable to control circuit components to select between a plurality of operational ranges;
the plurality of operational ranges being related to frequency ranges for an output of the oscillator; and
the selection of operational ranges influencing the value of the timing
10 element to modify the output of the oscillator.
2. The circuit according to claim 1, wherein the switching control is a comparator having a voltage reference input and an output coupled to the switching circuit.
3. The circuit according to claim 1, wherein the circuit components control current supplied to the timing element to select a range of operation.
4. The circuit according to claim 1, further comprising a reference voltage input to the switching control, the reference voltage influencing a point at which an input related to the selected operational range is applied to the timing element.
5. The circuit according to claim 4, wherein the timing element times at a first rate prior to application of the input and times at a second rate after application of the input.

6. A method for operating an oscillator, comprising:
charging a capacitor at a first rate to obtain a first time interval;
charging the capacitor at a second rate to obtain a second time interval;
combining the first time interval and the second time interval to obtain an oscillation frequency; and
varying at least one of the first and second time intervals to change a corresponding oscillation frequency.
7. The method of claim 6, further comprising comparing a reference value to a charging value to influence the timing intervals.
8. The method according to claim 6, further comprising switching a circuit parameter to modify at least one of the first and second timing interval.
9. A circuit for providing a plurality of oscillator output ranges, comprising:
a timing component for providing a variable timing interval;
a plurality of timing sources for influencing the timing element to vary the timing interval;
a switch for switching between timing sources to vary the timing interval based on cumulative timing sources; and
a switch control for controlling the switch to thereby control the timing interval based on the selected timing sources..
10. The circuit according to claim 9, wherein the switch control is a comparator with a reference value input.
11. The circuit according to claim 9, wherein the timing element is a capacitor and the timing sources are current sources that impact a charging time of the capacitor.

12. The circuit according to claim 11, further comprising a discharging current source for discharging the capacitor.

13. An circuit with an oscillator output, comprising: ²⁴
an adjustable timing device for providing a first slope and a second slope forming portions of a waveform determining a period of the oscillator output;
a timing device input for adjusting the timing device to selectively produce the first slope or the second slope;
a timing device output indicative of a value of the waveform determined by the first slope;
a reference value for comparison with the timing device output to produce a control output, the control output being operable to influence the timing device input to select the second slope.